Notebook, N-04-04-27

This notebook covers the period April-July 1904. It contains notes and drawings by Edison and an unidentified experimenter regarding storage battery experiments. Most of the entries relate to problems with the foaming action of the potassium hydroxide solution and to attempts to identify a compound that would retard the foaming. There are also items pertaining to improved techniques for loading iron powder in the cell grids. Inserted into the book are approximately 20 pages of notes concerning chemicals tested for foaming. The pages are unnumbered. Approximately 50 pages have been used.

X E172 040427 N-04-04-27

April 27. 1904

Up to present time have tried lot of Mixing Experts to stop foaming in M7c Battery, also present gases Carrying out BP. I am now started on Experiments to see if the problem Cannot be solved in a Commercial way

Have distilled Crude Pa Petroleum into many BP Legends & Tried in battery - those of low boiling point prevent foaming but they are too inflammable & the Vapors Carried off by the gases of Electrolysis might be dangerous in mixture if the auto or Car people drink Vulcanite when charging. The the higher BP are very little inflammable as their Vapor tension is low recovered 62 OK but they are too viscous in do not stop frothing generally but reduce by

April 27 1904

bubbles to small ones in a badly frothing oil - a curious thing is that only certain B P in Pet are uninflam but higher & lower B P are inflammable -

Have distilled Asphalt, Lignite Oil, Russian Wagout, Dippel Oil & tried the resultant distillates, all have same appearance as Petroleum -

Have tried nearly all of the Essential Oils & they act better as to foaming but most are too inflammable - The best liquid so far is Amyl Alcohol & its not very inflammable its objectionable on account of its narcotic effect of vapor, am making different Amyl compounds to

April 27 1904

see if can't diminish
inflammability + give pleasant
odor + reduce vapor
tension
Am trying to get all the
High BP alcohols to test,

Today am distilling Castor
oil to get Hexylic alcohol
as its BP is higher than
Cetyl alcohol

What it wants is a liquid
Mobilo without viscosity
Limpid, high BP smooth
Vapor tension or very little
of low inflammability etc
Going to go a long chase
from experts so far
The freezing point must also
be low + it must not be
affected by KOH or Oxydable
by the good + little soap
in KOH, Ok dear.

April 27 1904

Have rigged up hot test tubes with Medical Electrics to test def solution with foaming Kbaff 20% for effect & for those acting well for time test for boiling & loss by Evap

Found that the loss of amyl Alcohol by vapors being carried away by gassing is very great & it bubbles most bad probably not to use it except to stop a very bad foaming call for a short vehicle —

Cresline Oil 1 kg —
Creosote 3 Kg 1 kg —
Beech Tar Creosote 1 kg —
Amylene Hydrate OK best yet it works fine + very little throwing of spray vehicles
Cresline Oil enormous increase spray. Unfortunately Amylene

april 28 1904

The hydrate is inflammable otherwise if it had the allen properties it would be all right,

Terpenol works ok its not very inflammable, its terpin hydrate, Evidently the terpinols showed bad hydrated & the more hydrated the less inflammable

Terpenol in 48 hours in heat loses 1/2 & then appears not to lose any more

I can purify Terpenol by Hypo & KOH filter through ~~[illegible]~~ bone black & then air blow it to get off the most volatile & the resinous putting a little anthracene in it helps keep KOH from mechanically blowing out

april 28 1904

By taking Rodfd Oil amber
adding it by Hypo + KOH,
+ then filtering through bone
black works well very little
inflammable. think of air
blown would only be inflam
at very high temp +
Daly rigging up good supply
to air blown –

Am now trying to ascertain
what of the parkinsonian
substance got into cell
from mfg that causes it
to foam –

Try Paper, pine wood, Cypress wood
soft Rubber Butter Stearate
Soda sulphur Ferric hydroxide
alumina hydrate
Good quil Celotin Albanen
Fuller Cups from Glen Ridge
soaked in KOH Hg glycerine
glycerine + Stearic a
" + Soap
Collen –

April 28 1904

TEY

good —

Distillation in big iron retort of several lbs Castor oil. The one that left big Elastic residue. This was taken & put into glass retort & distilled & oil taken above 200 C & boiled in K Carbonate, Oil floated on surface took this off treated with acid Sodium Sulphite hot. The oil that floated on surface was then taken by 2 & treated hot 20% KOH twice & filtered through bone black. It works good in cold test

+ its very difficult to get it to flash requires one minute or more with flame —

It lets the KOH through by spitting

April 28 1904
7a.m.

It is strange that some liquids let the bubbles through containing KOH & some do not some thin liquids do not let it through while some very much thicker let it through. Its the peculiar nature of the liquid possibly those liquids which are alcoholic & have OH or hydroxyl that do not let it through so nothing can be told ahead only experiment can be used to determine this peculiarity

May 1 1904 7C

Experiments on putting different things in KOH to ascertain cause foaming
(Hazelton)

Lard. 3 or 4 grammes in oz KOH
No foaming

Egg albumen – Terrible foaming
a single drop of solution in good KOH will cause tube of Reg KOH to go up 2" or over from undoubtedly to albumen from the hands that causes the foaming troubles.

Hard Rubber Chips No foam
Cotton Waste No foaming
Butter No foaming
Gelatin foams very bad – goes up an inch – about 1/4 to 1/8 of foaming Capacity of albumen
Yellow pad paper along Concordion 1/2 + 1/2 with good KOH goes up inch about 1/2 as much as gelatin

May 1 1904

Pine wood No foaming
Glycerine & Soap No foaming
Sulphur "
Glycerine "
" & Stearic a "
Cypress chips just a little foaming 1/8" foam when 1/2 & 1/2 wood & bad Koff used - solution was dark —
Soft Rubber - No foaming
Aluminum Trihydrate

Silicate Soda — No foam
Ferric hydroxide, "
goose grass —
fresh chips from glen Rudy? "

After distillation of amber oil ~~a treatment~~ Koff, its propensity of stopping foaming is much diminished (so) it will be necessary to add something to it to change its surface tension where there is Co

May 1 1904 [illegible]

foaming. On the other hand purified bone black (acid purified) added to cask with oil - takes care of it -

Regarding distilling of KOH through oil Terpinol stops it all together, Rectified amber oil as bought does fairly well but redistilled amber oil lets it apt through, if there is a slight fouling to the oil the foam stops the apparatus

We have been distilling in glass Retort Oil of Rectified amber oil & find there are decrease very distinct BP.

173 200 210 220 253 280,

The oil of 253 BP is greenish - volumes all those of lower BP are yellowish. 280 is very green

May 1 1904

I now evaporate down in open air on steam plate in Evap dishes the various distillates for 2 hours then treat for 1/2 hour with 20% KOH, + then add Excess of hot water —

220 is Reddish strong + H_2O Colored Red —

175 B – H_2O Very Red oil light yellow —

253 is dark greenish + water Right reddish yellow very little action by KOH as this shows on the BP 1 it is in the practical quantity + is pbly the one we want as it is extremely difficult to act force with naked flame

280 is colored deep red
& H_2O light yellow

200 BP is Red + H_2O lighter
~ Color (yellow) Ulman. 280,

May 4th 1904 –

Have been distilling with +
without KOH, Resin, asphalt
+ other things to get an oil
to fractionate by distilling to
get a high BP oil but so far
nothing approaches the
high BP oils from Orlando

The BP 253 aprox is greenish
& its very hard to set it on
fire. it works in 1/4 inch layer
on bottom OK. let's spurts KOH
through but this can be
taken care of by valve

May 4 1904 7 A.M.

and excessive foaming by Bone black HCl treated which stuck to the oil —

Distilled about 3 lbs of Recd Oil Amber & am now redistilling & fractionating it to get the proper oil which I think is around 250 Cent. I find freezing point of oil also it doesn't solidify at Zero but only gets thick —

I don't believe there can be found an oil which is less viscous at old temp & which has such high BP & flash & fuse of ODTh & attack by KOH & has the properties it has for the purposes —

May 5 1904 T&E

Things to dissolve in 253 C amber oil to change its nature to see if smaller quantity Camphor need. Also if it possible to dispense with Bone black & take care of foaming without it –

Anthracene, Paraffine
Anthracene Orange – Base from
Mauveine, Abietin
Amarine Quarone
Benzylin Benzoin Benzoline
Benzoat Lithin Betulin
Cyanethane
Dolmar Resin now used part.
Helenin Hydrobenzoin
Hydrocinnamide
Part of 9 ciar Resin not sol KOH
Indigo blue
Marrubin Dibromonaphthalene
Hexachloronaphthalene
Onocerin

Oxynaphthalamine
Palmitone
Oxanthracene
Bromophenyl
Tribromophenylamine
Cyanine
Mononitrophenylamine
Pyroal Red
Quinoidine
Styrylamine
phenylacetamide
Sulphobenzide
Oxythymol
Acenaphthene
Hydranisoin
Anthracene Hydride
Dibromoanthracene
Dichloroanthracene
Tetrachloroanthracene
Anthraquinone
Hexachlorobenzene
Sulphobenzide
Dibromotoluene

Sulphololine
Dibromoxylene
Monobromocamphor
Conform boiled in Dilitmus resin mixture
Acephallene
Pentabromonaphthalene
" Chloro "
Dibromonaphthyl
Dioxyrestistine
Diacetyl-trichlorotoluhydroquinone
Benzamide
Anthrachrysone
Chrysean
Azodiphenylblue. KOH precays base
Indoloazine
Dibromoazobenzene
~~Tetrabromodiphenylazine~~
Benzylene-dimethylamide
Carbazol.
Conima or incense Resin
Dimethylanthraphthalein
Dibromofluorene
Ditolyl

Quinidine added to Amber Oil 170@190
in rather large granules dissolves by heat
and causes a 1/64 bubble froth 1/2 inch
prevents spitting. think of proper amount
used it could be got just right to produce say
1/16 froth + prevent spitting —

May 7 4 pm 1904

Experiments with test Tubes with Reg test Valves 6 Lamps -

No 1 Reg 21% KOH, Water 4.10

Oil 37/100 lbs - on 3.30, pm

May 8 11 am - KOH. 3 49/100 oil 37/100

test papers clean Refilled KOH 3 98/100

Notice a yellowish flocculent deposit floating 1/4" below oil.

No. 1 May 3.

Oil	Level of KOH	Paper	Valves
34/100	3. 87/100	4 specks	Moist Clean

Remarks Dark brown oily substance floating directly under oil.

Stopped current 8.00 A.M. Started 8.40 A.M.

No 1 May 10

Oil	KOH	Paper	Valves
34/100	2 97/100	8 spots	Clean moist

Refilled to original level

Stopped 8.00 AM Started 8.30 Reparrafined

No. 1. May 11

Oil	KOH	Paper	Valves
34/100	2.90/100	1 Big Blotch	clean moist
		received	

Refilled to original level

Stopped 7.40 AM Started 8.00 A.M.

No. 1 May 12

Oil	KOH	Paper	Valves
34/100	2.85/100	clean few spots from edge of valve	clean moist

Refilled to original level

Stopped 8.00 Started 8.20

May 13 Refilled 7.45 A.M.

No 2. Reg KOH, 4" May 7
3 40 pm - [Water 4 1/10 Oil]
37/100 6 hours
May 8 11 am - KOH, 3 38/100 - oil 36/100.
Test pipes clean. Refilled 4 8/100
Notice flocculent deposit floating just below oil in KOH.
No 2 May 9.

Oil	Level of KOH	Paper.	Valves
35/100	3. 93/100	Clean	Few drops of rust

Dark brown deposit directly under oil
paraffine loose, replenished.
Stopped current 8.0 AM Started 8.40 AM

No 2 May 10

Oil	KOH	Paper	Valves
37/100	2. 95/100	Clean	moist slight rust

Refilled to original level
Stopped 8.00 AM Started 8.30 Replenished
No 2 May 11

Oil	KOH	Paper	Valves
33/100	2. 91/100	Clean	Clean moist

Refilled ~~to 3.60/100~~ original level
Stopped 7.40 Started 8.00

No 2 May 12

Oil	Kill	Paper	Valves
32/100	2 57/100	bleam	bleam mord

Refilled 1 ounce oil

Stopped 8.00 started 8.30

Started Fresh same as before 2.10 PM May 12.

May 13 Refilled 7.45 a.m.

No 3, May 7 340pm —
KOH 4" Oil $\frac{57}{100}$ -

Albumen KOH, froth in reflect
2 inches without oil -
on 340pm 6 Lamps -
May 8 11 am - KOH, 3 to Oil $\frac{55}{100}$ -
Test pipes clean Refilled 3 $\frac{84}{100}$ - Clear

No 3 May 9.

Oil	Level of KOH	Paper	Valves
59/100	3.70/100	Clean	Slight rust moist

Light yellow deposit directly under oil.
Stopped current 8.00AM Started 8.40AM.

No 3 May 10

Oil	KOH	Paper	Valves
54/100	2.90/100	6 spots	clean moist

Refilled to 3.60/00

Stopped 8.00 Started 8.30 Repair finished
No 3 May 11

Oil	KOH	Paper	Valves
50/100	2.50/100	6 spots -	clean moist

Refilled to ~~original level~~ 3.60/00
Stopped 7.40 Started 8.00

No 3 May 1 R

Oil	Kolt	Paper	Valves
50/100	2 55/100	~~Stam~~ 2 spots	Clean mount

Refilled to original level
Stopped 5.00 Started 5.30
May 13 Refilled 7.45 A.M.

No 4 - Albumized KOH.
3.$\frac{2}{10}$ KOH, Oil $\frac{42}{100}$ -

added piece Ammonialed Copper
3/16 dia at fall to bottom
dont appear dissolve or Color
but notice black particles on
froth + it froths scarcely more
than Reg -
on 3.50 pm May 7 1904

May 8 10.50 am. KOH. 2 $\frac{58}{100}$ - Oil $\frac{42}{100}$
test paper clean - Methylin apparently entirel
trust dissolved Refilled KOH. 3 $\frac{90}{100}$ Clear

No 4 May 9

Oil	Level KOH	Paper	Valves
44/100	3.75/100	Clean	Slight Crust Must

Light brown deposit directly under oil
with one lump of foreign matter floating directly
under oil.
Stopped Current 8.00 A.M. Started 8.40 A.M.
Stopped 2.45 to repair leak through
Paraffine Started 2.48
Refilled to original level
Stopped 8.00 Started 8.30 Refunctioned

No 4 May 10

Cil	KOH	Paper	Valves
41/100	2.98/100	clean	Clean moist

Refilled to original level
Stopped 8.00 A.M. Started 8.30 A.M.

No 4 May 11.

Cil	KOH	Paper	Valves
39/100	2.90/100	clean	clean moist

Refilled to original level
Stopped 7.40 Started 8.00

No 4 May 12

Cil	KOH	Paper	Valves
35/100	2.95/100	4 spots large	Clean moist

Refilled to original level
Stopped 8.00 Started 8.30
May 13. Refilled 7.45. A.M.

No 5
May 11 3 o'clock PM
Oil KOH
Castor 6 Lamps
$ 50/100 4.0%/100

Distilled from solid wooden Castor
oil after the [illegible] distillation
[illegible] distilled oil
Height [illegible] hot plate
Their distillate [illegible] Thus is BP 220 to 260
at dont pass in ice & NaCl
works ok in cell — [illegible] all useful
in [illegible] glass [illegible]
[illegible] and oxidize & get [illegible] like
tapioca — & this only partially
oxidized by [illegible] of manganate
K MnO4 [illegible] —
No KOH smoke comes off from
foaming of KOH treated castor
Bone B — 1/32 Gubbins 1/8 to 3/16
Keeps on top [illegible] Bone B
dont mix with it by current
like CP 160 @ 170 Kerosene

Thus seems ok —
No 5 May 12
Oil KOH Paper Valves
37/100 3 0.5/100 blown blown moist
Refilled to original level
Stopped 8.00 Started 8.30 Deposit
upon glass above oil colour brown
May 13 Refilled 7.45 a.m.
Notice that the KOH solution in NO5 is the
only one of the 7 cells that is not
clear —

No 6 = Alburyzed KOH, bad foamer.
Shaken Bone Blk - 200 to 210 BP
distillate from Crude petrol
purified by H_2SO_4 Conc then washed
KOH + Bone blk filtered -
Ok for flashing - freezes solid in
MacPar Gas -
45/100 Oil - 6 Lamps May 11 1904.
630 pm -

No 6 May 12
Coil KOH Paper Valves
40/100 5.47/100 Clean Clean most
Not refilled
May 13 Refilled 7.45 a.m.

No 7 - albumenized RO ft.
with CP Boneblack by HCl &
acid washed fibre —
No oil - at 1st it did not foam
but after running 1/2 hour
foams 3/8 — ON | 6 gm - May 13 1904

May 17 1904

No 7 due to seven being leaky
abandoned them & started with
new leaky cells.

No 8 cell has KOH, highly
albuminized starting 3 weeks
to 70 @ C & then 250 milligrams
of the Reg dried bone black
I was had at Lab purified by
boiling 2 or 3 times in HCl
till I think nearly free of
ash was put in & shaken 1/2
dozen times, when a test in
test tube showed no foaming
then CP BB. seems to react
with lightening rapidly
think 100 milligrams would have
done as well — in No 8
I have the new heavy valves
later - while it did not foam in
test tube it foamed in sealed
cell probably didn't shake enough
foamed then and 18 2/3 - put sealed
clock in stopped at once

May 17 1907

No 9 - Cell same as No 8
except Reg Valve + B/B only
purified once with HCl +
half boiled —

Was forming 1/4 inch thick morning
18th - put dried stick in stopped
at once

No 10 – Albumen & Rot. [illegible]
[illegible] with Amber oil – after 14 hours
found at no forming – Wale phenolt
paper off [illegible] forming
[illegible] now fair

It appears that albumized Roll which forms 3 inches in test tube well has the foaming instantly reduced to nothing by a slick wet with fusel oil dropped in test tube, less powerful is ~~Camphor~~ Amber oil BP of high BP – Terpenol also is good next to fusel – whereas the petroleum distillates dont seem to work at all. The whole idea of stopping foaming appears to be formation on surface of thin skin of nonwater soluble liquid on surface & this stuff must have property of not globulizing otherwise it wont act & also it must not form bubbles of itself – fusel oil will not answer at its bo. volatile it soon goes away & the foaming starts up to inflammable – Terpenol ditto Amber oil is only one so far that is practically non inflam & non evaporable & has the necessary property. What is wanted is a liquid like Amber oil that is as good as fusel oil or camphor –

I am going to dissolve different substances in Amber O of high BP Lima to see if I can get it

Dissolve Naphthalene, Shellac Mi, Cerean Bulks - rubber, Cannuba, Asphalt Terpin hydrate, Carbolite Na Anthraquinone Anthracene, Rosin amber oil, Johnodin Mula Camphor.

No 11 - Albumen KOH.

8 drops Fusil oil -

it foams 1/2 inch on standing -

1.30 am 17th = stopped foaming in 1/2 hour then at 5 pm I returned & found it foaming. I was just going to lift valve out & looked at it. It lifted 1/16 when foam reached was inch high jumped back probably because a drop of fusil was dropped from valve but it gradually commenced foaming

at 5.30 put in 25 drops & will let it go till morning -

found it this morning is all foaming but the fusil having Evaporated some dissolved - I put in 1/8 inch of it = this cures foaming perfect & if we could get a non inflam non volatile oil to do as well it would be invaluable Can it be done? it looks hard? -

18th May 1904 -

No 12 – 10 Drops amber oil
decent slop foaming put in
addition 10 drops Thuja oil
reduced it to 1/4 inch 2 pm 17th
May 1904 at 5.30 foaming small 1/4.

17th 1904

Lemia 225 BP purified

H_2SO_4 + KOH, ~~Feb~~ Dont work

Same with little Rosin gives 1/8 foam after shaking total tube 16 drops this is pretty good — around edges there is some mord Rosin soap — Sol cloudy after shaking — there is something in this, its a soap former forgetting and albumin formers — like Cinnamon like may be

Cinnamon with Lemia - dis by heat goes solid — added more oil made opaque sol. few drops foaming 1/4 @ 3/8 ok - tol. solid slugg alcohol tube — No spitting — may be something in this foam quickly recedes to clear top filtered sol got it clear works OK 3/16 foam no spitting? — Recedes to clear top — this is going to be good — possibly can separate right thing from Cinnamon — possibly want only the sodal alcohol in it

Syrian asphalt & Luna 225 BP.
foam 1/2 inch, color permits one to see
where oil goes - part keeps all over the
foam & part - drops at water edge
Foam recedes quickly but not
perfectly when Cut off -
It stops spitting perfectly -
I add a few drops more the foam
is still 1/2 inch - perhaps allowed
have more or less asphalt
Something in it? =
I add more still 1/2" all the foam
is colored may be oil & asphalt only

Sleeraole Na & Luna Neg -

Mahoneane & Luna Neg

Cream & Luna Neg

Tried following with Lima. High.
B.P. pinfound Gula & KOH

Butyl Chloral Hyd
Hyoscy Iodide cum Mannit
Cerebromedin Hel
Agaricin
Diphenylamin
Cupreine
Sulphur Hydrate
Papaverin
Nitro Anilin
Sulphate Morphin
Chinolin Iodide
Julep Rosin
Quinidin
Turpentine Hel.
Naphthalene Alpha Dichloride
Ethylic Urethane
Resent Copaiba balsam – this is fair
'/2" foam iso-pithing. work it up
Hoparolin
Lepidinum
Santonin
Phenanthrene

ng

ng

ng

Guanidine Sulfo Cyan
Tolundin
Tolueudiamine Comel
Nitrotolunol para
Benzonaphtol
Tolundin base
Thioresorcinum
Pneakon
Nitronaphthalin
Resorcin
Alpha Naphtol
Rosanline
Salicin
Dialdehyde
Cinchonine Sulph
Fluorene
Carbazol
Anthracene
Vodamante of Jalapin
Orthocresol
Benzanilid
Cinchonidin Sulph
Cinchonin
Zimmite azobenzol
Borneol Camphor
Alcohol

ng

ng

Jam
no-pt-1/2

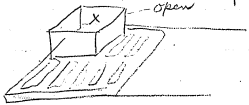
ng

Coffein
Dibromoazobenzol
Ethylene Chloride
Trichlorbenzol
Benzidin
Chrysoidin
Benzophenon — shows degrees
Acridine
Carbazol
Salicylanilide
Cellulose fibres
Dinitrobenzol

Mg.

Mg

July 25. 1904 Experiments on filling iron powder in pockets for Nickel Armstrong's Bullet



X Open box filled with Fe powder block mix — Dragged over & back vibrating at right angles slightly to load fro motion —

6 Up kts —

3.910
4 310
4 410
4 650
4 600
4 650

July 25 1924 —
Pressed 7c in hopper down while over plating — noticed bad drag on one 2nd pocket —
over 4 back — last 3 got more pressing (ie) double press —

3:870
4.090
5 100
5 00
4 420
4.830

On account of not having another plate beside the filling plate 1st plat dont get filled well — this time I worked ~~60x~~ over 7 6 after several times ~~a~~ overlapped to fill 1st plat going get a plate so filling plate be between two plates

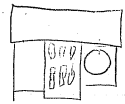
4350 5320
4750 5250
5080 5010

July 25 1904 28

Got Reg plate between two smooth plates. used Round Cylinder 3/4 full 7c - 5 inch high worked it over plate in various motions several times —

4,750
5 020
5 100
5 250
5 380
5 130

Put plate this

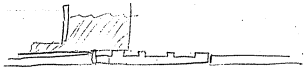


Worked over several times Varion Motion

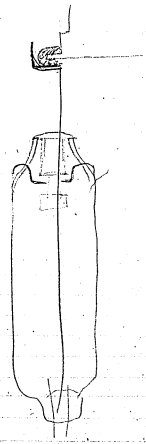
4,520
4 660
4 800
4 850
4 690
4,550.

Had not any much wow in Cylinder -

26 July 1904



treat free cups with 1/8 surplus
& then roll 2" Roller over –
tried it lengthwise this is result
6 005
6 330
6 300
6 400
6 200
5 930



4.2
2.
6/10 62 61.

9/10

Lowe — Put these notes in Lab Note book date & sign it —

compared with Good KOH

Potash picked Unsoaped

Bismuth Sub-Carb. same as good KOH

Magnesium Oxide " " " "

Strontium Carbonate Lumps about ¼ inch large bubbles

Lead Oxide — slowly more than good KOH

Zinc Oxide same as regular KO

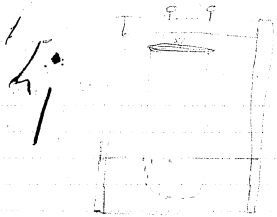
Zinc Phosphate little better than reg.

Mercury Oxide Above or better more irregular big bubbles

Magnesium Carb — same as regular

[ITEM FOUND IN BOOK]

[ON BACK OF PRECEDING PAGE]



[ITEM FOUND IN BOOK]

1 Marcotin
2 Philoquinon
3 Saccharine
4 amide-azobenzol
5 — Propionamine
6 Piperin — [illegible]
7 Aniline Violet [illegible]
8 Iodoform — Good 1/2 grad [illegible] KOH [illegible]
9 Atropin Sulfate [illegible]
10 Chlorophyll — [illegible]
11 Kresol Signs of [illegible]
12 piperidine Hydrochloride

[ITEM FOUND IN BOOK]

1 Naphtol Camphoratum

2 Xanthoxylum

3 Scammonium Pulver ng

4 Acetanilid 1015 235 245 2nd [illegible]

5 Urotropin Heft [illegible]

6 Tropsin ng

7 Diphenyl Urea ng

8 Cyanide ng

9 Hydrochlor Naphtol ng

10 Acetophenetidin ng

11 Quercetol Glucoside ng

12 Thiatin ng

[ITEM FOUND IN BOOK]

1 Propyl Benzoate — pretty good (Lacaba Koff.)
2 Urania — for Mg
3 Benzofluoresceïn — fair colors Koff (ad)
4 Hydroxyquinone — appears gr yellow at works good
5 Cinnamyne — Mg
6 Vanillid — acts green from 3/4 not returns green & R. clean for 1 & 2 comment
7 Resorcin — thus no good, 1/2" returns faintly green
8 Barium Sulfate — Mg
9 Naphtalin — Mg
10 Anemonin — Mg
11 Triphenylcarbinol — Mg
12 Asparagin — Very good no spotting 1/4"

[illegible]

1 Thymol — [illegible] mg
2 [illegible] mg
3 Benzophenone [illegible]
4 Oil [illegible] ? [illegible]
5 [illegible] mg
6 Ortho amidophenol mg
7 Salol.
8 Theobromin Good — 3/4 [illegible]
9 Protein mg
10 Arbutin mg
11 Brucin — 1/4 after [illegible]
12 Resorc Vanico Turpentine [illegible]
[illegible] mg [illegible]

[ITEM FOUND IN BOOK]

1 Bruceu Sulphate.
2 Nitrate Urea
3 Antipyrin -
4 Antimonchenon
5 Inulit
6 Beebarin HCl -
7 Alanin -
8 Ortol
9 Cinchoniclene
10 Onosin
11 Lactose
12 Bongamine -

[ITEM FOUND IN BOOK]

3,910
4,310
4,410
4,650
4,600
4,660

[ITEM FOUND IN BOOK]

1) Amber oil airblown.
Potash usual
Stops the foaming a little slower.

2) Amber oil treated with dilute warm H_2SO_4, KOH, – and filtered through bone-black.
Pot. usual
Stops foaming a little slower.

3) Amber oil filtered through bone-black
– as reg. A. oil.

4) Amber oil chlorinated by Peinkel. Phen.
Pot. usual
Stops foaming very slow.

5) Amber oil evaporated down a little on al. Pot. plate. Seems to be too thick and foams ~~pretty~~ bad. Much Potash in the foam.
Does not prevent the foaming in alumminated KOH as good as reg.

6) Amber oil evaporated No 2
Foams bad, Potash in the foam.
Seems to prevent the foaming in al. Pot. better than no. 5.

7) ~~Foaming~~ Amber oil Evapor. No. 3.
Foaming ~~reg. or a little more~~ pretty bad. Pot. in the foam.
To prevent the foam in al. Pot. no better than 5.

8) chlorinated Kerozene
Foaming good; Pot. not very good
Does not prevent foam in al. Pot.

[ITEM FOUND IN BOOK]

9. Fishliver from gum Fainer
saponified with KOH.
Foaming pr. good also Potash.
Prevents the foaming in al. Pot
pr. good.
10. Linseed oil in hot KOH 1/2 hour
Foam good. Pot. bad.
Does not prevent the foaming in al. Pot.
11. Terpineol
Foaming good Pot. good.
Does not prevent the foaming in
al. KOH
12. Cresol. Foaming good.
Pot. no good. Does not prevent
foaming in al. KOH.
13. Foaming good, Pot. pr. good
Does not prevent the foaming
in al. Pot.

[ITEM FOUND IN BOOK]

Name	Potash	Foam	Flame	
Oil of Bergamot	good	no good		
" Jasmin	?			
" Rosemary	?			
" Cinnamon	good	no good	very good	
" Birch	sinks and sol.			
" Cedar	bad	good		
" Cassia (orthe)	"	"		
Oil Sage	not very		pt. good.	
Bergaddelight	bad	good.		
Allthus Cinnamon	"	no "		
" Cassia (Rio) (purified)	pt. good	good.	no good.	
Oil of Cinnamon	good	pt. good	good	good.
Styrone liqu.	no g.			
Methyl Salicylate	sinks.			
Amyl nitr.	bad.			
Methylene iodide	sinks			
Amyl "	"			
Myrtol	?	bad.		
Oil of Sweet Myr	?	"		

[ITEM FOUND IN BOOK]

Name	Potash	Foam	Flame	Fr.
Eucalyptus chl.	sinks.			
Oil Wintergreen	"			
Lizzy chl.	bad	v. good		
Oil croton	?	v. bad		
Oil Fennel seed	no. good	v. good		
" juniper berries	?	bad		
" pennyroyal	good	v. good	good.	slightly sol. by KOH
" Savine	"	" "	not very.	"
" Orange sweet	"	not very	good	"
" pennyroyal	attention.	"	very good.	
Oil of Amber.	good	v. good	good	
" Cedrat	"	"	v. good	soluble
" Fir wood	?	bad		
" Camphor	?	bad		
Cresol	bad	good		
Oil Hemlock	good	v. very g.	no "	
" Hemlock seeds	?	no good		
Nitr. benz.	sinks			
Chenopodium oil	?	bad		

Name	Potash	Foam	Flame	Freezing
Terpinol	good	good	pretty good	? good
Isobutyl, isobutylal	"	"	no "	?
Oil of Cassia	"	no "	pretty "	
Isopropyl butyric	no "	good	?	
oil Wormwood	good	no good		
Creosot	— soluble.			
Fucosol	soluble			
Amyl acetate	not very good	good.		
oil of Lavender	good	not good	good	
oil Eucalyptus	"	not very	pretty good	
oil Wormseed	no "	good		
Kerosene	not very	pretty.	no.	
Oleanthal or div. Castor oil	?	very bad		
Fuse. Alcohol in Castor oil	pretty.	pretty good	good	
oil pinus	no good	good		
Pyridine	bad	good		
oil Horseminty	pretty g.	p. good	not very g.	
oil Sperm	?	bad.		
J. ribens	p. good	good	bad.	

[ITEM FOUND IN BOOK]

Name	Potash	Foam	Flame	Freeze
Formaldehyde	Sol.			
Paraldehyde	no good			
Eucalyptol, pennies	" "			
Dimethyl Aniline	" "			
Asepto	Sol.			
Methylchloride Bergie	?	no good		
Alcohol amylic	good	good	no good	
Bromal anhyd.	Sol.			
Amyl Nitrite	no good			
Triamylamine	no good	good		
Nitrobenzol propyl	" "			
Methyl Aniline	" "			
Oil sassafras	" "			
Glycerine	no good	good	no good	

[ITEM FOUND IN BOOK]

p-Cho dilo BP 223
Leq. SG 1.168

Nitro Toluene [illegible]
BP 230 $C_6H_4CH_3(NO_2)$ 1,3

Alpha Naphtol
$C_{10}H_7OH$,
MP 94 C
α alpha

Nitro-Xylene
meta deg. SG 1.112
BP 220.5

Ortho Cyl meta 29 C

Nitroso Beta Naphtol
$C_{10}H_6(NO)OH$ MP 109

Nitroso Diethylene Yellow oil
SG .951
$(C_2H_5)_2N(NO)$ Book 177.

Nitroso Dimethylene,
$(CH_3)_2N(NO)$ yellow oil
Book 1466 ff

[ITEM FOUND IN BOOK]

No 1 is Common yellow good
paper - on large [illegible] 1 to
Lumps + 1/2 of [illegible] 1 1/2 Koff
frothing [illegible] more as it
[illegible] used as [illegible]
in the paper —

No 2a [illegible] No foaming
17 No foaming [illegible]
17 no foaming
15 no foaming
16 No foaming
2b Cyprus just a little foaming
1 1/2 with 1/2 good Koff + 1/2 of
[illegible] solution [illegible]
bad Koff
No 3 No foaming
No 4 No foaming

[ITEM FOUND IN BOOK]

Boiling Emulsified oil, with ox Cu oxalate then PbO_2 also
Oleic acid dissolved with 1/4 its weight of quicklime
yields a neutral unsaponifiable liquid

act on acetone, by KOH, Xylite oil both #2304

have a dehydrating effect on acetone &

give following

Xylite-Naphthin	BP	110@120
Oxide Mesityl	"	131
Mesitylene	"	155@160
Phorone?		210 220
Xylite Oil –		above 200

Distill Rubber oil, Bottle with KOH Stick, and in Oil Cambridge

action unknown given KOH base only.

John about Duplicating from metallic Cylinder & burning off ammonia time

use of anthracene-Lubricant, asphalt, abraham with alcoholized KOH stop forming

act on Bone black with HCl wet the Carbon – then add lime to KOH use of black also to oil, also if it will move on gradually on forming to stop forming –

use for – forming call a pinch of it will on time stop forming

Distill some Rock Oil under oil on ~~of portion~~ second portion, now lots better

also therm & then ~~[illegible]~~

~~[illegible]~~ Evap 1/3 off & thoroughly act on by KOH, & test myself –

use of Anthracene Coke dissolved & then, with dolomite & pow with [illegible] also to finally decide to use for calcule

[illegible]

[ITEM FOUND IN BOOK]

Hydride Acetyl- yellow liquid
[illegible] smell, [illegible]
almost insoluble. SG 1.09 - BP 2[illegible]
insoluble in [illegible] ox to acid
Kott dont dissolve it [illegible]
[illegible] formaldehyde

Benzoyl chloride
Cyanide [illegible]
[illegible] smell [illegible]
oil. SG 1.023 at 0 [illegible] 1.008
BP 198 C. [illegible]
burns bright smoky flame [illegible] KOH
alcohol [illegible]
or R.Br [illegible] dont react at 10 [illegible]

[ITEM FOUND IN BOOK]

Hydrides are [illegible] oxidizing
light petroleum, gasoline etc with,
MnO_3 K Hypo, Nitric & Etc.)

Amylbenzylene Ether – Amylate of Benzylene
Liq – smell, like fusel oil, BP 292 C, S

Benzylic Alcohol, Benzoic alcohol,
Toluylic alcohol;

Colorless strongly refracting faint pleasant
smell. SG 1.05 at 14 C 1.063 at 0 C,
BP 205.5 insol H_2O

Benzylic Ether, Colorless oil BP 303 to 315
Ethyl-benzylic Ether. Chl Benzyl distilled
up towards with alc KOH. & liquid decanted from
KCl + mixed wi H_2O when separates a lower
the upper one distilled & part coming over at 195°C
thrice over $CaCl_2$ treated for [illegible] Colorless mobile liquid

[ITEM FOUND IN BOOK]

Camphenes are
Oil Bergamot
Cascarilla
Canadense
Neutral Oil Cloves
Oil Copaiba
Oil Pimento

Sandalwood
Oil Gomart
Oil Hops
Orange
Oil Pepper
Pimento

Oil Turpentine

Sulfuric great chemical affinity for water and
Camphenes

Camphene type from Pontic oil
SG .827 odor like oil Mace burns
bright smoky flame not sol H_2O or KOH,
Easily Oxidized,

~~Camphal with Chalcal~~

[ITEM FOUND IN BOOK]

Try Camphor alone on top of
KOH in small cell,
also all the things tried previously
like Camphor oil,

~~Tried~~ Give all Ethers decomp by
KOH?

Crude [illegible] Molecular Liquid
color Orange — SG 0.84 BP 175
Rot-Solubility at — 39°
Salm 2000 pts H_2O abs 60 0 fm air
45 Values 14 things converted to a Resin
its not changed by KOH, - perhaps at
cond of on KOH.

[ITEM FOUND IN BOOK]

Capromer in Benzoin
Cadinene oil BP 180 to 208C, insoluble

Citrus Capric oil [illegible]

Chinoline, [illegible] mobile
oil, dont freeze at −20C SG 1.081
at 10° BP 238, it. temp at ord
temp so oil stain on paper soon
disappears —

H_2S oil stain on paper
to test soap of oils
by acr pass
[illegible] sol H_2O

Not poisonous
burns with luminous but smoky flame
made by distilling quinine cinchonine
with KOH ag — b/ Eucalyptol of Nitrate
of Cinchonine —

[ITEM FOUND IN BOOK]

Cinnamein, Cinnamate of Benzyl
Colorless oily liquid at 112 to
—15°C. BP 305°C, S
#8 fatty pleasant odor water
grease spots on paper SG 1.098
Nearly insol H_2O, Slowly absorbs
moist Oxygen

Cinnamene, Cinnamol, Styrol, Volatile
oil liquid Storax made by distil
Cinnamic Acid at 1.5 BP
Mobile colorless oil, strong penetrant
aromatic odor, dark freezes at —20
very volatile, grease spots on paper
disappears in few seconds SG 0.94.
BP 145 neutral, not attacked KOH,

[ITEM FOUND IN BOOK]

Amylic
Oenanthylic
Caprylic or Octylic,
Cetylic

[illegible] of the
[illegible] is radic [illegible]
Methyl - CH3 — is the
radical + so on
not the alcohol

Valeric a gives Tetryl or
Butyl — Caproic a gives
amyl — Oenanthylic a
gives Hexyl or Capryl —

dried in the [illegible]
Crude Hydrocarbon
of decomp by distilling
from water [illegible]
gives alcohol
Radical

BP Tolyl 68c Tetryl. 108
amyl 155. Hexyl. 202
They do not unite with any of the
elementary bodies

[ITEM FOUND IN BOOK]

Heptylic a —
Recirculation of K distilled through lamp
gives Heptylic a. Sebate K + H.

Ethal, is Cetyl alcohol from lamp Spermaceti
by fusing - solid fat

Ceryl alcohol, same way from Chinese Wax
& Myricyl alcohol from Beeswax —

Benzyl alcohol. Hydrate of Benzyl
Cumyl-alcohol Hydrate of Cumyl-
Syncoceryl-alcohol " " Syncoceryl.
Benzyl alcohol obtained by treating the aldehyde,
(Bitter oil almonds,) with alcoholic KOH.
& Cumyl-alcohol from Cumin same to Cuminal,

[ITEM FOUND IN BOOK]

Cholesterin is an alcohol, or

Styrone is an alcohol obtained by heating Styracin with KOH.

Saligenin is an alcohol.

Anisic alcohol prepared by alcoholic KOH on Hydroxy Anisyl —

Ethylene-glycol or Hydrate of Ethylene is an al
propylene-glycol is an al
Butylene-glycol is an al
Amylene-glycol is " "
glycol is obtained by heating Iodide Ethylene with
recent Ag-quoing acetate of Ethylene —
by heating this with KOH gives Hydrate of Ethylene
only liquid

Amyl Chlorid BP 155 C trans
liquid. aqueous smell burning taste,
Specg 77 at 11 C. not sol H_2O.
Not miscible
got by Distillation of Chloride of Potassium
Amylalcohol Solidifies at −22 C
Specg 0.811 at 19 C — BP 132 C nearly
insol in water.
[illegible] to set on fire, burns
with white smoky flame —
in contact with air and temp it slightly
oxidizes & undergoes a slight reaction, to Valeraldehyde
Chlorine gas is absorbed in large quantity
a gas & Chloramyl homologous with
Chloral, — Does amyl at the same Kett.

[ITEM FOUND IN BOOK]

Oxide of amyl BP 180. C. to amylic

made by action of H2SO4 on amyl alc heated to

in retort, acid separated then alc either shook

then tube, the clothes [illegible] chlorin worth

Carb Mag [illegible]

its Calcium [illegible]

[ITEM FOUND IN BOOK]

Stirring boiling KOH dissolved all,
oil of anise —
The Camphor got by chilling out the oil
below 10 C of heated acetic acid,
Sulphate of Na — gives Methyl + Hydrid.
of anisyl —

Try up Chlorinating app —

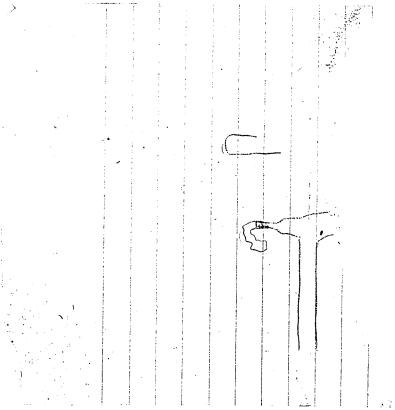
Try with the oil formed from anisum the
tube with cons. Sulphuric and foaming KOH —
of 20%.

Anisol — used KOH, Calorian Mobiloil
liq. paraffin used, SG 0.991 —
BP 152 C

Get some pentachloride Sb for Chlorinating

[ITEM FOUND IN BOOK]

6,005
6,330
6,300
6,420
6,200
5,930

[ITEM FOUND IN BOOK]

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